

NYMPHALIDAE

<i>Polygonia c-album</i>	O <i>Ribes uva-crispa</i> L. (<i>R. grossularia atlanticum</i> = <i>R. uva-crispa</i>)	8	2800 m
<i>Melitaea phoebe</i>	O <i>Centaurea</i> species (<i>Centaurea</i>)	6	2050 m
<i>Euphydryas desfontainii</i> Godart	O <i>Knautia</i> species (<i>Knautia arvensis</i>)	2	1600 m

Key to Localities

1. Ouaouizarhte, Middle Atlas. 1100 m altitude records from agricultural land adjacent to town. 1400-1600 m records from mountain and Rnim Colpizi pass to the north, mostly in *Quercus ilex* woodland and *Chamaerops humilis* steppe.
2. Ifrane, Middle Atlas. 1600 m, steppe, pasture and *Cedrus atlantica* forest close to town.
3. Col de Tanout, Middle Atlas. 2100 m, partly degraded *Q. ilex* woodland.
4. Azrou, Middle Atlas. 1500 m, regrowth of *Q. ilex* woodland following cutting, above the town.
5. Anjil Ikhatarn, Middle Atlas. 1850 m, steppe vegetation on main P 20 road.
6. Col du Zad, Middle Atlas. 2100 m, valley meadows and degraded *C. atlantica* forest.
7. Setti Fadma, High Atlas. 1700 m, overgrazed mountainside in Ourika valley.
8. Ourika valley, High Atlas. 1900-2800 m, further up the valley from Setti Fadma. More overgrazed hillsides and terraced valley floor.
9. Oukaimeden, High Atlas. 2600 m, high plateau with alpine meadows and Lekak valley below.
10. Tizi-n-Tichka, High Atlas. 2350 m, above road pass in mostly degraded (overgrazed) alpine meadows.
11. Timhadite, Middle Atlas. About 1900 m. *S. bavius* record 8 km to east, overgrazed meadow.
12. Col Tairhempt, So. (Midelt) High Atlas. 2150 m, above road at summit of pass.

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Mating Confusion Between a Mimic and its Model: *Erynnis* (Hesperiidae) and *Euclidean* (Noctuidae)

Stamps and Gon (1983, Ann. Rev. Ecol. Syst. 14, p. 243), discussing the context of female-biased polymorphism in Lepidoptera, observe that "Occasionally, males of model species might court females of the mimicking species. . . then male mimicry could lead to cross-specific courtship, because females might mistake

courting model males for mimicking conspecific males. This potential confusion would be compounded because of frequency-dependence (i.e. model males would be more common than mimic males) and because Batesian mimicry can involve behavioral subtleties such as flight patterns or the choice of a microhabitat. At best, a female's confusion. . . would lead to a waste of her time and energy. . . ." Observations of such interactions are, however, remarkably rare in the literature.

Diurnal flight has evolved twice in the *Drasteria* group of Noctuid moths. In each case there is a strong resemblance to sympatric and synchronic butterfly species which fits the general picture of Batesian mimicry: the butterflies (models) are phenotypically normal while the moths (mimics) depart markedly from the appearance of their relatives, in phenotype as well as in behavior. The "Blue Moth," *Caenurgina caerulea* Grt., is common in spring in foothill and lower montane habitats in California, flying sympatrically and synchronically with the Lycaenid *Celastrina argiolus echo* Edw. and other less common Blues. Two very similar species of *Euclidea*—*E. cuspeida* Hbn. in the East and *E. arditia* Franc. in the Western part of the United States and southern Canada—co-occur in spring with skippers of the genus *Erynnis* (Hesperiidae), from which they may be distinguished in flight only with difficulty. I have seen male *C. a. echo* investigate *C. caerulea* in the air, but never a courtship *per se* involving these species.

A male *Erynnis propertius* Scud. & Burg. was watched for over 3 min, beginning at 1305 hrs, 17 April 1984, as it courted a female *Euclidea arditia* in the understory of riparian oak woodland at Rossmoor Bar, Rancho Cordova, Sacramento County, California. The moth's flight was characteristically slow; it lit about four times but was immediately nudged into flight by the male's attempts at copulation. In the air the male hovered behind the female in the normal manner for *Erynnis* courtship, and it was not realized that the interaction was interspecific until the moth first lit. She took no apparent evasive action, but the pair was ultimately lost as they flew into thick shrubs. *Erynnis tristis* Bdv. was common in the area (about 20 seen); the *E. propertius* was the only example of its species seen. About ten *Euclidea* were seen flying in dappled light and shade in the area. Weather conditions were: scattered cumulus, air temperature ca. 22°C, SW wind 15 km/h. Insofar as I can determine, *Euclidea* courtship is undescribed. To a human observer, a male *Erynnis* is rather easily recognized by its rapid flight and territorial behavior, but females are virtually indistinguishable from *Euclidea* in the air—the resting posture, however, is easily diagnostic.

The basis for the inference of mimicry in *Caenurgina* and *Euclidea* is purely contextual, as neither of the presumed models is known or even suspected to be distasteful. However, there is increasing recognition that mimicry may be based on forms of undesirability other than unpalatability. The differential flight characteristics of *Erynnis* and *Euclidea*, for example, suggest that a poor probability of capture and a poor ratio of energy expended in pursuit to energy reward from capture would make *Erynnis* an undesirable or at least low-priority prey item. A case of this sort was described by Hespdenheide (1973, J. Entomol. (A) 48:40-56) involving mimicry of elusive, swift-flying Dipterans by beetles.

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